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THE AMERICAN PRACTITIONER

MARCH, 1871.

Certainly it is excellent discipline for an author to feel that he must say all he has to say in the fewest possible words, or his reader is sure to skip them; and in the plainest possible words, or his reader will certainly misunderstand them. Generally, also, a downright fact may be told in a plain way; and we want downright facts at present more than anything else.—RUSKIN.

Original Communications.

MULTIPLE CEREBRAL SCLEROSIS.*

BY WILLIAM A. HAMMOND, M. D.,

Professor of Diseases of the Mind and Nervous System and of Clinical Medicine in the Bellevue Hospital Medical College, Physician-in-Chief to the New York State Hospital for Diseases of the Nervous System, etc.

In multiple cerebral sclerosis the lesion involves several parts of the same ganglion, and consists of plates or nodules of sclerosed tissue scattered throughout its substance. It is only of late years that the affection in question has been partially recognized as a distinct pathological condition associated with certain symptoms. These symptoms were formerly, and still are to a great extent, confounded with other groups similar in several prominent features, but different altogether in anatomical relations, normal and abnormal. Thus under the designation of paralysis agitans were comprehended the phenomena due to multiple cerebral sclerosis, multiple cerebro-spinal sclerosis, and muscular agitation general or local—the

* This article is from the forthcoming treatise of the author on Diseases of the Nervous System.

result of very dissimilar lesions, or without discoverable morbid changes of any kind—the one symptom of tremor sufficing to bind them together. Even by late writers the distinction is not clearly made out.

It is, in the present state of our knowledge, impossible to say in all cases what part of the intracranial mass is affected. Still we are not altogether without data on this point, and an attentive consideration of the symptoms will often at least enable us to say what ganglion of the encephalon is the main seat of the lesion. I shall not venture to deal with pathological refinements, but proceed to point out, with as much succinctness as possible, one form of the morbid process under notice—a form which I think I am enabled to describe, from my own observations, with considerable accuracy. That form I shall designate

Multiple Sclerosis mainly affecting the Hemispheres.

Symptoms. Among the first symptoms noticed in this affection is pain, which occurs in sharp paroxysms of short duration. Sometimes the sensation is as instantaneous as an electric shock. It is rarely the case that there is any extreme constant pain experienced, though a feeling of fullness or constriction is occasionally more or less permanent. In a few cases the first observed symptom has been an epileptic paroxysm.

It is not uncommon to meet with disorders of sensibility in other parts of the body; and these may either be anæsthetic or hyperæsthetic in character. Probably the most common is a numbness of the ends of the fingers or toes, which gives the sensation of cushions when objects are touched, and which is generally confined at first to a single upper or lower extremity. Shooting pains, something like electric shocks, are also sometimes experienced. The progress of the disease is almost invariably slow, and hence several months may

elapse before any disorders of motility are experienced. These, however, are the next symptoms to make their appearance, and are generally first manifested by the occurrence of tremor or trembling.

Tremor usually, but not always, is gradual in its development, and may be restricted to narrow limits. It may at first only be felt when the patient is unusually quiet, and has not his attention engaged. Thus a gentleman told me he had, for several months, only been sensible of a vibration in his arm when he lay down at night. It was then — from the description he gave me — limited entirely to the extensor indicis of the left hand, and was, in the beginning, not strong enough to move the finger. When I first saw him, several years afterward, both arms and one leg were strongly agitated.

In another case, which I saw almost from the very beginning, the tremor was restricted to the same muscle for several months, and then gradually involved the extensors and flexors of the hand; and in several other instances which have come under my notice the onset was equally gentle. But, as I have said, this is not always the case. A gentleman consulted me in the summer of 1870, who, after having experienced severe darting pains in the head and through the limbs on the right side, was suddenly, while in his field overlooking some work, seized with a violent trembling of the right hand, which continued for several minutes, notwithstanding his efforts to prevent it. A few days subsequently he had another accession of a similar kind in the same limb, and by degrees the intervals became shorter, until, in the space of a month, the tremor was constantly present except when he slept, and when I saw him had extended to the whole arm and to the lower extremity of the same side.

In another case, a gentleman much addicted to excessive mental exertion was awakened one morning by a violent agitation in his right foot. He had been under my care several months previously for severe headache and inability

to sleep, for which, believing them to result from inordinate intellectual labor, I had recommended mental rest and horseback exercise. Under the use of these measures he had apparently quite recovered, but against my advice had resumed his literary labors. He was not very confident how long the shaking of the foot had lasted, but thought it was not more than a few seconds. Several days afterward, while writing, his right hand began to tremble slightly. He ceased his occupation and rubbed his hand with the other. The tremor stopped for a moment only, again began, and has scarcely ever since been absent. The whole side eventually became involved.

The tendency of the tremor is always to extend. Beginning in an extremity or a group of muscles, or only in a single muscle, it goes on attacking others until at last all the limbs and even the head may become affected. By preference, the advance of the tremor is lateral; that is, if an arm be first invaded, the leg of the same side next suffers, then the other arm, and then the corresponding leg. Usually the head is the last part attacked; but this is not always so, as I have seen several cases in which the trembling began in it.

For a long time the tremor is to some extent under volitional control. A patient, for instance, will slap his tremulous hand on his knee and for a few seconds can manage to keep it quiet, but it soon begins to shake again, and though perhaps a second time he may arrest its movements by a like process, the period of rest is shorter. Any change of position is calculated to quiet the tremor for a time, and thus the patient is every few minutes moving his arms or legs in the attempt to get a little respite. It is always increased by emotional disturbance of any kind. A limb which may ordinarily be but slightly tremulous will shake violently from the excitement or anxiety produced by making a visit to a physician. The effort to keep it quiet will also often increase the tremor. For a very considerable period after the beginning of disease the

shaking ceases during sleep, but eventually this state affords no respite, and the patient is thus deprived still further of his physical strength. It is not often the case that the muscles of the face are affected very early in the disease, but they frequently become involved at a later period. In several cases I have seen a constant tremor in the upper eyelid of one or both sides, and in one instance this was the first manifestation of the disease.

In another very remarkable case the first indication of tremor was perceived in the left eyeball, which was by clonic spasms of the internal rectus muscle kept in a state of motion producing a kind of nystagmus. The upper lid of the same eye next became affected, and then the tremor appeared in the corresponding arm. The upper lip I have several times seen tremulous, causing thereby an indistinctness in the articulation. I have never observed other muscles supplied by the facial nerve to be involved in the tremor. Occasionally the lower jaw is rendered tremulous from the seat of the disease being at the origin or in the course of the fifth nerve. The tongue is sometimes affected with tremor, generally at first on only one side, and I am inclined to think that the muscles of the pharynx and larynx do not invariably escape.

The tremor is not, as some authors have asserted, only manifested when voluntary movements are performed. This is probably the case, at least in the first instance, with multiple cerebro-spinal sclerosis, but it certainly is not in the purely cerebral form now under consideration. Jaccoud* calls attention to the error which has been committed relative to this point, and my own experience is uniformly in support of the opinion he expresses.

The next symptom of importance to make its appearance is paralysis; and when the sclerosis is limited to the hemispheres or begins in them it always follows the tremor. On this point I have insisted, in my lectures to the class of the

* Traité de Pathologie interne, p. 194.

Bellevue Hospital Medical College, as an important indication of the fact, that paralysis agitans is often a cerebral disease, and I am glad to find so exact an observer as Jaccoud* asserting that the paralysis is often preceded by muscular agitation or trembling. At first the loss of power is slight, and, like the trembling, is limited to a single muscle or group of muscles, but it gradually extends until it involves the limbs of one side, or even of both sides. According to my observations, it follows the course of the trembling, no limb being ever paralyzed till it has for some time been affected with tremor. In the face, however, the paralysis appears to be independent of the tremor. The period which elapses between the appearance of the tremor and the accession of the paralysis varies in different patients, and even greatly in the same patient. Thus some muscles may exhibit notable loss of power in a few weeks after they have begun to be agitated, while others remain free from paresis for many months.

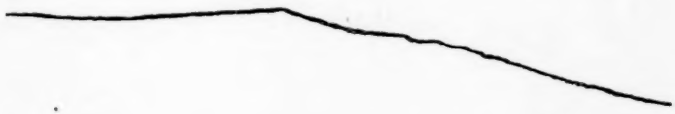
When the loss of power affects the extensors or flexors—especially in the former event—contractions may take place, as in diffused cerebral sclerosis, and the limbs are thus more or less distorted. The most common seat of this phenomenon is in the upper extremity, and it generally begins in the fingers, extending gradually to the wrist and elbow. But in some cases, even though the antagonism between certain groups of muscles be destroyed, there are no contractions. The muscles of the head, face, and trunk do not escape. Strabismus, ptosis, and facial paralysis are thus produced, and the muscles concerned in speech, in deglutition, and in respiration likewise become involved. The sphincters, according to my experience, are rarely paralyzed in the early stages of the disease, but I have several times witnessed paresis of the bladder among the primary symptoms.

A marked symptom which I have observed, and which can only be distinctly shown by means of the dynamograph, is

* Op. et loc. cit.

the inability of the patient to maintain a continuous muscular contraction for even a short period. I have noticed this as among the very first indications of paresis, and I am disposed to think it exists even before the tremor is noticed. Thus a gentleman occupying a prominent public position, and in whom I had diagnosticated multiple cerebral sclerosis mainly affecting the hemispheres, instead of making a straight line with the pencil of the instrument, traced one of which the following cut is a *fac-simile:*

Repeated efforts only gave worse results. In another case—that of a gentleman referred to me by my friend Dr. Van Buren—the line made was as follows:



Here the patient was able to maintain the contraction at its original force for only about the sixth of a minute—the time required for the paper to traverse the pencil being exactly half a minute, and a third part of the line being horizontal.

The ability to coördinate the affected muscles is always impaired, and thus in voluntary movements there is agitation independently of the esoteric tremor. This is seen not only in active movements, but in passive muscular contractions, such as those by which an article is held in the hand. In such a case the fingers can not be kept in apposition with the object, but are moved about in a disorderly manner. The

incoördination is manifestly connected with the inability to maintain a lengthened muscular contraction, to which reference has just been made. Sometimes, by the strong effort of the will, assisted by the sense of sight, the last two difficulties may for a little while be overcome. A gentleman now under my charge, suffering from the affection in question, can not, for instance, carry a glass of water to his lips except by looking at it fixedly and concentrating all his volitional power upon the act. His lower limbs are not yet affected, and he consequently can coördinate them in walking and other movements perfectly well. In another case, a lady, affected with multiple cerebral sclerosis, undertook to help her invalid husband to rise from his chair; a band of music happening to pass the window, she turned to look at it, and, at once relaxing her hold, let him fall to the floor and injured him severely.

Zenker* reports a case in which there was a similar loss of the appreciation of the state of the muscles; and another is mentioned by Reynolds,† under the head of "muscular anæsthesia." I am very sure that many cases of this last-named affection are instances of multiple cerebral sclerosis, and I shall presently more specifically refer to two remarkable cases which have occurred in my own experience.

Another phenomenon closely related with this incoördination is generally present in multiple cerebral sclerosis, and that is that the patient loses that innate or early-acquired knowledge of the exact situation of the several parts of his body. We can, all of us not thus affected, close our eyes and touch with the end of the finger any particular point on the face or rest of the body with the utmost exactness; but a person with multiple cerebral sclerosis involving the hemispheres can not do this. Thus in attempting, with the eyes shut, to place the end of the index-finger on the middle of

* Ein Beitrag zur Sklerose des Hirns und Rückenmarks. Henle and Pfeufer's Zeitschrift für Rationnelle Medezin, Bd. xxiv. 1865.

† System of Medicine, vol. ii, p. 330.

the eyebrow, he misses that point sometimes by as much as two inches; and no matter how frequently he tries he succeeds no better. It would appear that in such cases the normal instinct of topographical relation between the fingers and the cutaneous surface generally, which all persons and many animals seem to possess, is impaired.

The electro-muscular contractility is never, according to my experience, diminished in multiple cerebral sclerosis, uncomplicated with similar lesions in the spine.

The attitude and gait of a person affected with multiple cerebral sclerosis are peculiar. In standing the body is generally inclined forward, the head falling toward the chest, the trunk flexed at the pelvis, and the knees slightly bent. In walking the action is similar to a jog-trot, the body being still inclined forward, and the patient often moving with considerable rapidity. I have had several persons with the disease under my charge who could not walk at all, but who could run with surprising agility. One of these, a man advanced in life, sent to me by my friend Prof. Sayre, was unable to take a step in my consulting-room. He was carried downstairs by his attendants with some difficulty, and when he reached the front door he was put on his feet. He then told his servant to give him a push, which the man did with all his might, and the old gentleman, being started, went at a full run and jumped into his carriage without the least difficulty.

There is often a strong tendency to plunge forward, and at times there is an impossibility of controlling it except by catching hold of some fixed object. Not long since I was walking down Broadway, when I saw in front of me a gentleman who was then under my charge, and in whom I had diagnosticated multiple cerebral sclerosis. Although aware of his peculiar impulsive gait, I had never seen it so strikingly manifested as it was then. He went at a full trot, threading his way among the numerous people in the street, until,

apparently exhausted, he would lay hold of a lamp-post or awning-post and cling to it till he had recovered his breath, to start off again in a similar manner.

This impulsion of the body forward makes it easy for the patient to ascend a staircase; but, on the contrary, very difficult to go down one. The first case of the disease in question which I saw in this city, over six years ago, was characterized by an extreme degree of festination. It was that of a maiden lady, over fifty years of age, who had been affected for several years. When she was going up-stairs no one could perceive the least irregularity in her gait, but to go down was impossible. Sometimes, however, the tendency is to go backward. This was the case, to a remarkable extent, in a gentleman, a resident of this city, who was sent to me by my friend Prof. Van Buren. Every time he rose from his chair he was forced to take several steps backward, and it was only by constant mental effort that he was able to go forward at all.

The tactile sensibility is generally impaired from a very early period in the course of the affection, and thus the two points of the æsthesiometer must be more widely separated than in the normal condition of the system in order to get two separate impressions. This anæsthesia bears no necessary relation to the region of skin covering the affected muscles. According to my experience it is most marked at the terminal extremities of nerves. Numbness of different degrees, pains of various kinds, increased or diminished temperature, and excessive hyperæsthesia of the skin may also exist. The special senses may be affected to a variable extent. Thus there may be amblyopia, or even complete blindness; the taste is very often impaired or abolished, and the hearing rendered less acute. The ophthalmoscope should always be employed to examine the fundus of the eye. The condition generally found to exist is white atrophy of the optic disk, which is identical in general features with sclerosis. The vessels of the retina will usually be found small, the branches

of the veins few in number, and the choroid of a paler hue than is natural.

The course of multiple cerebral sclerosis is progressive. The patient is finally unable to walk, the friction of his shaking body against the bed abrades the skin, the dejections are passed involuntarily, and he dies either in coma, in convulsions, or by a gradual process of asthenia, his mind participating in the general decay. The duration of the disease varies from a few months to eight or ten years; generally it runs its course in about five years.

Causes. Age is certainly one of the most powerful predisposing causes of multiple cerebral sclerosis mainly affecting the hemispheres, and causing the symptoms heretofore classed as paralysis agitans. Thus of nine cases in which I diagnosticated the disease in question all were over fifty years of age, and three were over sixty. I have seen numerous cases of paralytic tremor in younger persons, but the morbid condition had scarcely any points in common with that now under notice. Cases, however, are on record in which young persons were the subjects. There is some evidence to support the theory that it is sometimes hereditary, but the whole subject is so confused in the minds of most authors that it is difficult to make out clearly what they refer to under the designation of paralysis agitans. Of the nine cases occurring in my own practice, private and hospital, four had immediate ancestors who had suffered from some form of tremor and paralysis. Whether the lesion was purely cerebral, cerebro-spinal, or whether the disease was entirely functional, I was not able to decide from the information given. The influence of sex is more readily ascertained and is very evident. Seven of my cases were males and only two females. Of exciting causes there are many. In two of my cases it followed immediately on attacks of scarlet fever; in one it was a sequence of typhoid fever; in one it ensued after rheumatism; in one it was probably syphilitic; in two it was apparently excited by

great emotional disturbance; in one by inordinate muscular exertion, and in two no cause could be assigned, or at least there was not, in my opinion, any sufficient exciting cause to be discovered.

Diagnosis. Multiple cerebral sclerosis has heretofore been confounded with other diseases, and its very existence as an independent affection is doubted by my friend Dr. M. Clymer* and other writers. To this point I will return when the morbid anatomy and pathology are discussed, and, as in the foregoing account of the symptoms and causes, will base my remarks under the present head mainly on the results of my own experience.

The occurrence of "head-symptoms" is sufficient to diagnosticate multiple cerebral sclerosis from functional paralysis agitans, which is never a very serious affection, and the seat of which is not centric. Besides, in the latter there are no festination, alterations of sensibility, incoördination, muscular anæsthesia, or inability to maintain a continuous muscular contraction, while the paper of the dynamograph traverses the pencil of the instrument. The functional disorder is more liable to occur in persons under fifty than in those over that age. From the cerebro-spinal form of multiple sclerosis, it is distinguished mainly by the facts that the tremor makes its appearance before the paralysis, and that the agitation is present whether voluntary movements are being made or not. With the purely spinal form it is not likely to be confounded by any one paying the slightest attention to the phenomena of the two diseases.

From chorea it might in some cases not be readily discriminated without a thorough study of the clinical history and existing symptoms. But though chorea sometimes occurs in adults, and is generally accompanied by "head-symptoms," the two affections possess few other phenomena in common.

* Notes on the Physiology and Pathology of the Nervous System, with reference to Clinical Medicine, page 7. New York, 1870.

In the first place, the mental symptoms in chorea are indicative of feebleness from the very first, while in multiple cerebral sclerosis imbecility supervenes late in the course of the disorder. In chorea there are no vertigo, pains in the head, or other evidences of congestion, while in the disease under notice these are among the very earliest symptoms. In chorea there is no actual tremor, but the disorderly movements are more extensive and irregular than in multiple cerebral sclerosis; neither is there festination or bending of the body forward.

Tremor is sometimes met with after cerebral hemorrhage or other cause producing hemiplegia, but in such cases the clinical history, and the fact that the trembling comes on after the paralysis, will suffice to render the diagnosis sure.

Prognosis. The prospect of recovery is always unfavorable, but not, I am induced to think, absolutely hopeless if the patient be seen sufficiently early in the course of the disease, and is submitted to proper medical treatment. The probability of an arrest of the onward tendency is by no means small under like circumstances. Still, in the great majority of cases, all means fail, and the affection gradually and persistently goes on to its termination, death.

Morbid Anatomy. The membranes of the brain are sometimes opaque in patches, and occasionally contain an abnormal amount of serous fluid. The cerebral convolutions are occasionally flattened, and the gray substance is thinner than in the normal condition. It may also be changed in color, being pale, and scarcely, according to Jaccoud, to be distinguished from the white substance. On cutting into the tissue of the hemispheres, plates or nodules of hardened matter are found scattered throughout its extent. These are well defined and vary in size from that of a cherry-stone to that of a small walnut. In the only case in which I have had the opportunity of making a post-mortem examination, they were confined entirely to the white substance of the hemispheres. Their

color is white or grayish-white, and they are of varying degrees of consistency from that of hard-boiled white of egg to that of cartilage. Examined with the microscope, they are seen to consist of the neuroglia, which, to a great extent, has taken the place of the nervous tissue, and of the *débris* of this latter in the forms of fibers, nucleated cells, and free nuclei. They are formed therefore by the hypertrophy of the connective tissue of the brain at the expense of the nervous tissue proper.

Sometimes there are very few of these deposits—indeed, there may only be one—and at others they are present in large numbers. In the case examined by myself there were seven in the left hemisphere and eleven in the right, of sizes varying as previously stated. They may be found in other parts of the cerebral mass besides the hemispheres, though in the form under consideration these are their most prominent and constant seats. Thus they may exist in the hemispheres and in the medulla oblongata, the pons Varolii, and the cerebellum, at the same time. When they occupy likewise the spinal cord, another disease is produced which differs anatomically and pathologically from multiple cerebral sclerosis. Sometimes large numbers of amyloid corpuscles are met with, but their presence is not constant.

Pathology. The first question to be considered under this head relates to the existence of multiple cerebral sclerosis as an independent affection—that is, without lesions of like character being at the same time produced in the spinal cord.

The weight of authority is probably against the view expressed here; and as I have, so far as I know, made the first attempt to identify a certain group of symptoms with multiple sclerosis limited to the cerebral ganglia, I am the more desirous to place the reasons by which I have been actuated before the reader.

Andral,* under the designation of partial induration of the

* Préces d'Anatomie Pathologique, tome ii., 2e Partie, Paris, 1829, p. 810.

brain, describes the morbid anatomy of an affection which is probably the same as that under present consideration, although his account of it is by no means full or precise. Valentiner,* citing a number of cases observed by himself and Frerichs, details one in which the lesions were limited to the brain, and in which the symptoms were similar to those I have specified in this chapter. Jaccoud declares that certain cases establish the possibility of sclerosis limited to the encephalon. In a note he refers to several writers who have stated the parts affected, in some of which, however, the spinal cord was also involved. In the following it appears to have been restricted to the brain: Stœhr, hemispheres corpora mamillaria; Dumville, protuberance medulla oblongata and corpora olivaria; Pool, hemispheres centrum ovale; Cruveilhier, anterior face of the medulla oblongata, protuberance, cerebral peduncles, corpus callosum, walls of the lateral ventricles, and the origins of the pneumogastric glosso-pharyngeal and hypoglossal nerves; Duplay, hemispheres, particularly in the vicinity of the ventricles, optic thalami, and corpora striata; Van Camp, protuberance; Obertimpfler, hemispheres; Barthez and Rilliet, hemispheres, particularly one convolution; Cohn, hemispheres in two cases; Gunsburg, hemisphere, gray substance of the convolutions; Valentiner-Frerichs, cerebellar peduncles, corpora olivaria, protuberance, and medulla oblongata; Meynert, cerebellum and protuberance.†

Bourneville and Guérard,‡ while asserting that the existence of multiple cerebral sclerosis as a separate and distinct affection rests on only one case—that of Valentiner—which they further declare was probably imperfectly reported, admit

* Über die Sklerose des Gehirns und Rückenmarks. Deutsche Klinic, B. xiv., 1856.

† I quote this note from Jaccoud, without vouching for its correctness, as from the fact that he does not cite the works in which the details are to be found I have not been able to verify his statements.

‡ De la Sclerose en Plaques Disséminées, Paris, 1869. Analyzed by Dr. E. C. Seguin in Archives de Physiologie, etc. No. 4, Juillet et Août, 1870, p. 524, *et seq.*

that the cerebral form may be regarded as established. But none of the authors who have referred to it identify a form of paralysis agitans with a lesion characterized by the presence of bodies of sclerosed tissue in the brain, and especially in the hemispheres. Thus Dr. Clymer expresses the opinion that, excluding the tremor, which may accompany hemiplegia and certain other disorders of which it is an altogether secondary phenomenon, there are but two varieties of paralysis agitans: *first*, that which results from multiple (disseminated) sclerosis, affecting the encephalon and spinal cord; *second*, a purely functional disorder, first fully described by Parkinson.* Now, in my opinion, Parkinson has described two very distinct affections under the name of paralysis agitans. One of these is certainly functional also as far as this, that the tremor shows no disposition to extend to distant parts of the body, that it is the only symptom present, that no lesion has been discovered, and that it is readily cured; the other is characterized by the phenomena which I have detailed in this paper, and which, though imperfectly described by other authors, have either been confounded with multiple cerebro-spinal sclerosis or regarded as constituting an aggravated form of the functional disorder. My views of its true pathology have been formed from careful observation of the course of the disease in nine cases, in one of which I was enabled to make a post-mortem examination.

P. B., male, aged sixty-five, formerly a drummer in the army, and latterly an instructor of buglers, came under my observation at Ceboleta, New Mexico, in the winter of 1849–50. While milking a cow, one evening, he suddenly experienced a severe pain in his head, which lasted only a few seconds. He soon afterward had an epileptic paroxysm, during which he bit his tongue severely. He had no other

* Essay on the Shaking-Palsy, London, 1817. I have not been able to find a copy of this work in New York, and have for several years been unsuccessfully trying to obtain it. My citations from it are therefore second-hand.

fit, so far as was known, but the pain in the head recurred at different times; never, however, lasting longer than a minute or two. No other symptom appeared for several weeks, and then he experienced severe darting pains in the arms, and soon afterward the left hand began to shake. On examination I found the tremor limited entirely to the extensor communis digitorum, and that the motion was entirely in the line of extension and flexion. Little by little the other muscles of the forearm became involved, and then the disorder extended upward, affecting the biceps coraco-brachialis triceps, deltoid, and the muscles of the shoulder generally. The arm was much weaker than the other, although he was left-handed. In about three months after first noticing the tremor in the left hand the left foot began to shake, and, as in the first instance, the agitation gradually extended upward, until, so far as I could see, all the muscles of the extremity were involved. He now complained of numbness in the ends of the fingers of the affected extremity, and this slowly extended to the whole arm. The sensibility of the leg remained intact. Next the right arm went through a similar sequence of phenomena, then the right leg, and finally the head. There was no decided tendency to forward impulsion till both legs were involved, though there was difficulty in maintaining the erect posture, and the body was inclined forward before either inferior extremity became affected. But with the accession of tremor in both lower limbs, a marked disposition to trot, and a corresponding difficulty of walking slowly, made their appearance. For over a year the tremor ceased as soon as the patient went to sleep, and it generally became less troublesome as soon as he lay down and tried to sleep. But at last it continued night and day, and thus apparently hastened the termination of the disease, for he lost strength rapidly from deprivation of sleep. This debility was still further increased by innutrition from improper food, it being impossible, in the then state of the country, to get any fresh vegetables. During

the whole period from the occurrence of the first paroxysm of pain there was a gradual but marked failure of the mental powers, until a condition of very decided imbecility was reached. Death finally took place about two years and one month after the epileptic fit, which occurred on the same day with the first pain felt in the head.

I made the post-mortem examination with great care, but without any clearly preconceived idea of what I should find, except that I expected to discover lesions of some kind in the brain and spinal cord. On removing the calvarium, the membranes covering the surface of the hemispheres were found to be healthy. I removed the entire brain from the skull and carefully examined the base. There was no appreciable lesion of any kind. No tumor, no induration, no softening of any of the ganglia. The membranes were dissected off, and the convolutions on the superior surface were, I thought, less distinctly marked than was normal. I then cut through the right hemisphere horizontally an inch from the surface, and was surprised to find the course of the scalpel resisted by a hard body. This I discovered to be a mass of dense tissue one inch and a quarter long, half an inch wide, and about half an inch thick. I then very thoroughly examined the hemisphere, not allowing any part of it to escape observation, and discovered eleven of these nodules of variable size — the smallest as large as a cherry-stone, the largest about the size of a walnut—in the white substance. In the left hemisphere I found seven similar masses. There were none in the peduncles, in the optic thalami, in the corpora striata, in the medulla oblongata, pons Varolii, cerebellum, or any other part of the encephalic mass. I then examined the spinal cord in like manner, making several hundred sections of it, but found no alteration anywhere. It was perfectly healthy in every respect, neither congested, softened, nor indurated in any part of its extent.

The sclerosed bodies were, many of them, as dense and

hard as cartilage, others were like hard-boiled white of egg, and others like cheese. No microscopical examination was made. In this case the lesions were entirely limited to the hemispheres, a circumstance which I can well believe is not common—other ganglia of the brain generally participating and giving rise to corresponding modifications of or additions to the symptoms. Thus when the medulla oblongata is involved, there is difficulty of swallowing and implication of the muscles of respiration; when the pons Varolii is affected, we have, among other symptoms, facial paralysis; when the corpora striata, more intense paralysis; when the optic thalami, derangement of vision and perhaps of hearing; when the crura cerebri, various unilateral convulsive movements and participation of the muscles supplied by the third pair of nerves; and when the cerebellum, especially the crura, the tendency to go backward instead of forward; and so on with the other important parts of the encephalic mass.

Other relations connected with the pathology will be considered when the subjects of multiple cerebro-spinal sclerosis and what, for want of a better name, may be called paralysis agitans are reached.

Treatment. To detail all the various methods which have been employed in the treatment of the group of symptoms which I have classed together as multiple cerebral sclerosis mainly affecting the hemispheres would be a fruitless piece of labor. Many of the cases of cure which have been reported were not instances of the disease now under notice, but of the milder and, so far as we know, functional disorder; and therefore it would be useless to adduce them as guides in the present connection. I shall therefore confine my remarks to the results of my own experience.

I am very sure that the condition of the patient is generally improved by the simultaneous administration of the chloride of barium and hyosciamus. The former may be employed in doses of a grain three times a day; the other,

in the form of the tincture, in doses of from one to two drachms morning, noon, and night. Care should be taken that the latter preparation be fresh and properly made; as sold in the apothecaries' shops it is often inert. By these two remedies alone the tremor is often markedly diminished, and the paralysis and other disorders of motility and sensibility greatly lessened.

Thus in the case of a distinguished gentleman, a senator of the United States, who consulted me in the spring of 1870, for what was designated shaking-palsy, but in whom I diagnosticated the disease under consideration, amendment was perceived from the very first day of the treatment. The tremor and paralysis diminished, the mind became stronger and more able to endure exertion, and the physical strength much increased. He was soon able to write and to attend to his official duties, and he has continued in his advanced stage of improvement to the present date. He still, however, takes his medicines, and will probably be obliged to do so for a long time yet.

In another case, that of a gentleman living in the interior of this state, no means have been so successful in improving the general health and arresting the progress of the disease as the chloride of barium and tincture of hyosciamus. I have given these remedies alone, or in conjunction with others, in six cases, and never without a decidedly favorable effect. Electricity is, however, a powerful adjunct, and I always employ it when the opportunity exists for so doing. The primary current, from fifteen of Smee's cells, should be passed through the brain antero-posteriorly and laterally, as previously described, and the sympathetic nerve should likewise be acted upon by a current of similar intensity. The tremulous muscles should also be subjected to the influence of a primary current of low tension. I am not sure that it makes any difference in which direction the current be passed, but it is important that it should not be so intense

as to cause any considerable pain. For the paralysis the induced current, not too strong, is to be recommended, and for any contractions that may be present it is the preferable form to use.

A gentleman over sixty years of age, from Tennessee, consulted me in September, 1870, for tremor associated with paralysis. His physician, Dr. W. W. Yandell, came with him and gave me much valuable information in regard to the progress of the disease. In the first place there had been, several years previously, symptoms of a disordered cerebral circulation, indicated by pain and vertigo. Soon afterward tremor supervened in the left hand, and gradually extended to both limbs of that side. There was also paralysis and loss of sensibility. When he came under my notice the upper extremity was more affected than the lower; contractions had taken place, and the fingers were strongly pressed against the palm of the hand, the hand was bent on the forearm, and the elbow was flexed to its utmost extent. The limb was somewhat atrophied, but electro-muscular contractility was not sensibly impaired. The voice was exceedingly weak, but there was no paralysis of the tongue or facial muscles; and, though the patient could not speak above a whisper, every word was articulated distinctly, and was appropriately used. The body was greatly bent forward, the attitude being that of a person ascending a steep hill, and there was decided festination. The tremor and paralysis were much more marked on the left side than the right, and the agitation was altogether independent of voluntary movements. The mind, except as regarded the memory, was not essentially impaired, and the sight and hearing were unaffected by the disease. There had never been any convulsive attack or loss of consciousness, and the course of the disease had been extremely gradual. Ophthalmoscopic examination revealed nothing beyond an anæmic condition of the retinæ and choroids. I diagnosticated multiple cerebral sclerosis mainly

affecting the hemispheres, but probably involving also the right corpus striatum, and I prescribed the chloride of barium, tincture of hyosciamus, and electricity. He remained in New York a few days and then returned to his home with the tremor abated, the contractions partially overcome, the muscles improved in strength, and the tendency to festination lessened.

A month afterward Dr. Yandell, who had continued the treatment, wrote me of the patient that the improvement was more decided than his most sanguine friends had anticipated, and still continued; that the agitation was scarcely perceptible; that he could more than half extend the fingers of the left hand, could straighten the wrist and elbow, and could lift a chair or put on his hat with the right hand. From what I have since ascertained he bids fair to recover entirely.

If the general health be materially impaired, cod-liver oil, iron, and strychnia may be administered with advantage. The food should always be highly nutritious, and a glass or two of wine, if not particularly contraindicated, may be taken daily with advantage. Passive exercise in the open air is always beneficial, but excessive walking or strong muscular exertion of any kind should be carefully avoided. Emotional excitement or mental labor must be rigidly avoided. Under the treatment thus indicated the patient may at least be relieved of a great deal of his suffering.

New York, 162 West Thirty-fourth Street.

ON FOOD IN HEALTH AND DISEASE.

READ BEFORE THE LOUISVILLE COLLEGE OF PHYSICIANS AND SURGEONS.

BY LUNSFORD P. YANDELL, M. D.,
President of the Society.

All organisms and germs possess in their normal condition the power of appropriating to themselves nutritive matter, by which they are developed and fitted to perform their various functions. This peculiar attribute, variously styled a vital principle, a *vis vitæ*, a *nisus formativus*, and so on, belongs to all living things. An inherent developmental capacity, resident in all healthy germs, evolves the oak out of the acorn, food being furnished the embryo plant first by the acorn itself, and then by the soil and the atmosphere. The starch stored up in the cotyledons by the influence of heat and moisture is transformed into dextrine and sugar, and these, with oil and albuminous matters, form the protoplasm by which the germ is nourished. Developed into a plant by caloric, it sends its plumule into the air to be further affected by the heat and light of the sun, and its radicles into the earth for lodgment and for fresh supplies of food. The leaves on acquiring a green color acquire with it also the capacity to drink in and decompose the carbonic acid of the surrounding air, and the roots absorb ammonia, with silicates and phosphates, from the soil. Regulated in its development by the law of "each after its kind," the embryo plant grows up into a perfect similitude of the parent tree. The type is preserved through the ages by this germinal force imparted by the parent. Its growth is due to the caloric which it receives, and which it has the power of applying, in its own peculiar fashion, to the construction of its fabric after its own predetermined type. The germ, which is but a speck of matter, assimilating to its

structure as it is developed the inorganic matters in its neighborhood, becomes in time the giant oak, of which it may be truly said:

> "Time was when, settling on its leaf, a fly
> Might shake it to its base; and time has been
> When tempests could not."

Heat is the force which wrought the change; for during all the centuries of its growth its increase has ceased in winter. At every period of its existence caloric has been to it the developmental principle.

The animal germ, like the vegetable, is supplied by the parent organism with nutritive matter, as it also derives from them its germinal capacity. In the eggs of reptiles, and especially of birds, this store of aliment is ample, and the embryo subsists upon it during the stage of its development. But, unlike plants which, when the stock of food laid up in the seed is exhausted, have the power of feeding upon inorganic compounds, animals first and last require organic matters for nutriment. In the egg the young bird or reptile finds, with the albumen, oil and water, phosphorus and lime, sulphur and potash; in a word, all the materials necessary to its organization. The heat essential to the metamorphosis of these substances into the animal tissues is afforded in the case of birds by the incubating parent; the vital heat of the mother becoming the organizing or vital force of her young. The eggs of most reptiles are hatched by the heat of the sun, the temperature of the parent being too low to accomplish the organic changes; and in this class of animals, as in plants, solar heat becomes directly the developmental force. The young of all cold-blooded animals from the first moment of leaving the shell must find their own nourishment; but birds after being hatched, except in a few families, depend still for many days or weeks upon their parents for food; and the pigeon tribe approximate the mammalia in furnishing a secretion in their crops for the young birds when first liberated

from the shell. The embryo mammal from the earliest phase of its existence is nourished by its mother's body, first by blood through the uterus, and then by the mammary secretion; and in this secretion we have a type of true aliment. Milk, like eggs, contains all the elements requisite to the nutrition, growth, and development of the animal. As out of the egg come all the parts of the bird, so by milk alone all the organs and tissues of the animal system are nourished, and the bulk of the young mammal is increased with a rapidity while subsisting upon milk hardly ever equaled at any subsequent period of its life.

It follows that milk is a highly composite fluid, since no other could furnish nutriment to so great a variety of parts. With physiologists and chemists it has long been a most interesting point to determine what office is performed in the animal economy by the several classes of food. What is the role severally of the albumen, caseine, sugar, oil, etc., contained in milk and eggs.

Liebig some thirty years ago came forward with an answer to this question, which seemed so satisfactory that for a long time physiologists were hardly disposed to seek further information on the subject. The scientific world was led captive by the theory. It is hardly too much to say that the minds of men were held by it in a sort of fascination. A few old teachers, it is true, stood out against it, having been too long wedded to their idols, of a vital force antagonistic to chemical action, and a principle of sympathy by which they explained most of the functions of the animal body, to admit this intruder into the domains of life. Prominent among these were Prof. Payne and my old colleague, the late Prof. Caldwell, of this city. These veteran physiologists rejected the theory of Liebig *in toto*, from its first principle, that any vital action could be accounted for by chemistry, to its final deductions, and fought against it *pugnis et calcibus, unguis et rostro*, as the learned old Professor of Louisville

would have expressed it. But the opposition was limited to a very small number. The great body of physiologists and physicians all over the world adopted, without limitation, the chemical theory as affording the true account of the several offices of food.

According to this theory all alimentary substances are to be referred to one or the other of two great classes, the nitrogenous and the non-nitrogenous; and of these one is plastic, the other respiratory. Nitrogenous food is strictly nutritive, forms blood, and is for the generation of tissues. That which contains no nitrogen takes no part in histogenesis, but has for its object the production of animal heat. The albumen of the egg, the caseine in milk, the gluten in flour, the fibrin in flesh, all essentially the same in composition, and the three last easily convertible into albumen, constitute the true pabulum from which blood is formed, the source of all nutrition. Oil, sugar, starch, and the rest take no part in building up the fabric; but by a species of combustion in the system, brought about by union with oxygen inspired from the air, maintain the temperature essential to vital activity. Herbivorous animals are nourished by the albuminous compounds in their food, and kept warm by the abounding oils, starch, and sugar. The carnivora, subsisting upon matters highly nitrogenized, but deficient in fat, sugar, and starch, maintain their animal heat by the oxidation of their own waste tissues. Hence the great activity of this class of the animal kingdom. The hyena, which stands for the whole family, is in confinement a proverb for restlessness. The final cause of his activity is the disintegration of his muscular tissue, that fuel may be furnished the oxygen taken in by the lungs, and so the necessary process of combustion be maintained. He wears out his muscles pacing his cage from side to side in order to keep himself warm. Man is omniverous. His food has the same twofold purpose as in other animals, and his instincts impel him to the use of one class or the other, according to the

climatic or social conditions under which he passes his life. In high northern latitudes, where there is an excessive draught upon his vital heat, he craves fatty matters rich in carbon and hydrogen, and the oxidation of these elements maintains his healthy temperature. The inhabitants of hot climates, on the contrary, having no such demand upon their calorific function, relish a diet of vegetables and subacid fruits. In temperate latitudes the diet most acceptable to its inhabitants is one in which the two classes of elements are harmoniously blended, the desire for the hydrocarbons increasing with the change of seasons from hot to cold.

Such briefly is the theory of food which has held almost undisputed sway over the minds of men for more than a quarter of a century. Among those who were led captive by it I number myself; but from the beginning there was a fact long familiar to me which I was not able to reconcile with the theory. This was the large consumption of fat by laborers on southern plantations, and the comparatively small amount of nitrogenous matter entering into their diet. I had all my life seen negroes eating fat middling and corn-bread in preference to any other food while laboring in the cotton-field under a burning sun. If fats and starch are, as held by Liebig, purely calorifacient, why is it, I could not help asking myself, that they are so much relished in climates where one of the troubles of its laborers is an exalted temperature? If the Samoyede and the Esquimaux devour blubber and train-oil to maintain the heat of their bodies, what prompts the negro at the South to feed upon fat bacon? The cravings of the appetite for the same species of food in these opposite conditions can not be philosophically referred to the same want of the economy. The negro and the Esquimaux can not eat fats for the same purpose. And the Peruvian miners, who carry heavy burdens from morning to night, upon a diet of potatoes, and Turkish porters, who are among the stoutest men in the world, and yet live almost exclusively upon oils

and rice, whence do they derive the albuminous materials necessary to this great muscular exertion, supposing it to take place at the expense of the muscles themselves? If these undergo so rapid a disintregation when in a state of activity, how is the waste repaired on such a diet?

It is very clear that on this point the views of Liebig are not tenable, and it is a little remarkable that they should have stood their ground with physiologists so long. The hydrocarbons — fat, sugar, starch, etc. — it is evident, must have some other end in the animal system than the generation of caloric; muscular power must have some more adequate source of supply than the waste of muscular tissue. Is it not evident that these hydrocarbons and muscular force stand to each other in the relation of cause and effect? While the muscles are at first formed and kept afterward in a state of integrity by nitrogenized elements, to what else can we refer their activity if not to the oxidation of these compounds? Heat and motion are correlative forces. Motion arrested becomes heat, as heat is continually giving rise to motion. In the animal body the combustive process is the source of both; the force in one case taking the form of motion, in the other that of animal heat. The alimentary matters which enable the Esquimaux to brave the cold of his arctic winters give strength to the negro to do his work under a tropical sun. In one the oxidation of the food results in caloric; in the other it generates the power of locomotion. The appetite for oleaginous matters is nearly as imperious in the latter as in the former; and one would succumb as certainly to continued labor as the other would to intense cold if denied food, though the former would doubtless hold out much longer.

The facts which modern science has elicited in regard to the elements of food have established some principles of great value both in therapeutics and hygiene. The desire for change of diet is nearly universal in men, and points to

the necessity for variety of food in order that each organ and tissue of the body may find its due supply of aliment. There can be no perfect growth and no thorough repair when waste occurs, unless all the elements of the organism are contained in the food taken; for I suppose no one now believes that the living system has the power of creating any of them. Any deficiency soon appears in faulty nutrition and the failure of some function. If, for example, the proportion of lime be too small, or for any cause the absorbents fail to take it up, the error is expressed in a rickety osseous system. Pigeons reared on oats, it is said, have been known to break their wings in attempting to fly; and an example of still higher interest is presented in the agency of fat in nutrition. Sir Wilson Philip, in his work on indigestion, mentions a patient who could digest his toast only when it was saturated with butter. It is now well understood that fat is essential to cell-formation. The development of nitrogenous tissues themselves can not take place without it. Albumen must have oil associated with it in order to generate a cell; and consequently the oleaginous element appears always combined with the albuminous principle in the germ, animal and vegetable. It prevails in nuts, seeds, and grains; it abounds in milk, and is a constituent of eggs. To those who have good digestion it is a most acceptable article of food; and the absence of a relish for it in children and young persons is to be regarded with suspicion, indicating as it does very often the existence of a tubercular diathesis. Fat should therefore enter liberally into the diet of children, as supplying not only the materials essential to growth, but those also which are necessary to muscular activity; and where the taste for it is wanting, it should, if possible, be created by change of air, active exercise, and iron and other tonics. When we encourage children to eat food rich in oleaginous matter, we are taking one of the surest steps toward the prevention of tubercular disease.

It is hardly reasonable to regard the love of variety in diet to which reference has been made as any other than an expression of the animal economy as to its wants; and this being the case the appetite, when natural, must be taken as the best guide in the selection of food. A perverted, morbid, or vitiated appetite is a different thing. A craving for clay, slate-pencils, or (as I once saw in a young woman) printed paper, is one not to be indulged of course, but met with the preparations of iron. But the desire for any special article of food, when genuine, denotes a necessity for it in the system, and the craving in nearly all cases may be safely gratified. And this is especially true of children, and of patients at the stage of convalescence. It is impossible to doubt that the universal love of sugar in the young expresses an actual need of their organizations. Saccharine matter takes an active part in that combustive process which we have seen is the source both of animal heat and of muscular activity; and doubtless it aids largely in the maintenance of that perpetual motion which is one of the characteristics of children.

In common life we habitually act upon the principle that the appetite is a trustworthy guide, and eat what we like with an assurance that it will agree with us all the better because we relish it. Animals in a state of nature have no other monitor. We are quite sure that the northern savage acts wisely in obeying the desire for articles of food which to us would be unwholesome and decidedly disgusting; and yet I doubt whether, as a profession, we have reached the point of conceding to children and patients the same freedom in the choice of their diet. Physicians still, for the most part, insist upon laying down rules in respect to what their patients shall eat and drink. I have long pursued the opposite course; and to the question constantly asked by the sick or their friends, "What shall I eat?" my pretty uniform answer is, "What you like, if you can get it." Dyspeptics and fever patients, convalescents and the subjects of chronic complaints, infants and

adults alike, this is my rule with all. "Take your baby to the table," I say to parents whose child has been long ill with cholera infantum, "and let it make known by signs, if not able to tell you, what it wants. Its appetite can inform you with more accuracy than all our science what are the needs of its system." Beefsteak, mutton-chops, fried eggs, broiled middling, potatoes, pickles, whisky, whatever it shows a decided appetite for, I would give it. There are exceptions, of course, but this is the rule; and safe and valuable as I have found it in regard to food, it holds with even greater emphasis with respect to drinks. In no case, I would say, should cooling drinks ever be withheld from the sick. Of all their cravings thirst is the most importunate; and the instinct to breathe is not a more infallible expression of the wants of the body parched by fever than the desire for cold water.

The fashion of starving patients, which raged as a sort of mania in the profession some forty years ago, has happily now passed away, and the practice at this time is to feed them. Dr. Caldwell, in an eloquent lecture on temperance when this mania was at its height, expressed the belief that more mischief was done to the human race by eating than by drinking. In convalescents especially mortal was the dread felt by physicians and nurses of relapses from over-indulgence of the appetite. Every bad turn was sure to be set down to something eaten if the patient took any food at all. I remember well a case illustrative of this dread of over-feeding, of which one of my younger brothers was the subject. He was recovering from remittent fever, and had so far regained his strength as to be able to totter to the office where I was studying medicine. His appetite had returned, and the day on which he ventured out of his room he had eaten of chicken-pie at dinner. The following day he had a chill, succeeded by fever, an intermittent having probably supervened. I had attended my first course of medical lectures, and had just been reading Armstrong on Fevers, whose account of scruple-

doses of calomel in such affections had delighted me. Such a dose therefore I decided my brother should have, and without waiting for the advice of my father it was administered. The next day my patient was prostrated. Incessant nausea and vomiting followed the operation of the calomel, and for some days we feared he would die from exhaustion. My father, according to the theory of the times, ascribed the relapse, with all its attendant dangers, to the chicken-pie; and on the recovery of my brother congratulated me on having given the timely cathartic. It would have been a vast relief to my feelings, while my brother was lying apparently at death's door, had I been able to "lay that flattering unction to my soul;" but I was not able. Even then I could not see the case with my father's eyes, and his compliment to my practice sounded to me very much like irony. I had at the time a strong suspicion, which amounts now to a thorough conviction, that it was not the dinner but my medicine which wrought the evil.

In nearly all acute diseases there is failure of appetite; and in cases of long duration it becomes a most important problem how to sustain the vital powers of the patient. Multitudes doubtless died of inanition when it was the practice to let them lie for weeks without nourishment, just as men in health would have perished under the same circumstances. Safe as it is generally to follow nature, in cases like this we must disregard her admonitions. The waste of tissues is so rapid in all diseases of a high temperature that nutriment becomes essential to life; men in this condition resembling birds, whose fabrics require to be so much more frequently replenished than the bodies of cold-blooded animals. Their systems are as rapidly wasted in fevers as they would be by hard labor; and hence the emaciation which so quickly ensues in them. Liquid food is unquestionably best suited to the sick; and in regard to the variety I allow great latitude to my patients. But of all diet milk appears to me the most

eligible, as I have found it much more generally relished than the beef-essence now so much recommended. It combines all the nutritive elements; it restores the tissues, and protects them against oxygen; it has caseine to make blood, and sugar and oil for combustion; above all, it is often highly grateful to the sick, especially buttermilk.

I will close this paper, perhaps already too long drawn out (although only a few points connected with the subject of food have been touched), with the history of a case bearing upon it which came under my notice many years ago. When I was a very young practitioner, in the autumn of 1826, I had an interesting patient with bilious fever, a Miss Gillespie, whose residence was some eleven miles from mine. The fever ran on unchecked, for we had not then learned all the powers of quinine, and my patient became greatly emaciated. Typhoid symptoms made their appearance, and to my inexperienced eye the case appeared nearly hopeless. I was unguarded enough to let the nature of my prognosis be known to the friends of the young lady. About the same time her disease reached its crisis, and it so happened that for one day I was unable to pay my daily visit. On that day she showed signs of returning appetite. She thought she would like a raw onion. The thought to the family appeared monstrous; but, as it was believed that she was going to die anyhow, her wishes were obeyed, and she ate the onion, seasoned with salt and vinegar. When I visited her on the following day she was manifestly better, and went on steadily improving, and got well. And I suppose I need hardly add that the onion got the credit of curing her, however clear it may seem to our minds that the longing was only an evidence that convalescence had begun. But I will say that in all the years since that case fell under my care I have striven against the temptation to give a gloomy prognosis, and have been much inclined to indulge the cravings of my patients' appetites.

A discussion of the foregoing paper ensued, as follows:

Dr. Wible agreed to some extent with the views expressed in the paper. There is a great deal of truth in the leading idea, that of following instinct in the selection of food. All of us are governed by this principle more or less; eating things because they are palatable to us, drinking when we are thirsty, mingling salt with our food, and the like. But half truths are the most dangerous form of errors, and this appears to me to be one of that sort. It will not do to take instinct as our guide in all cases. Children will often take food which they ought not to have, and disturb the household all night by their cries in consequence. In the regulation of their diet we must be directed by judgment. Children would perish from improper food if not governed by their parents. And if necessary to use discretion in health, how much more necessary must the exercise of judgment be in sickness, where instinct is still less reliable! At a certain age particular articles of food are not digestible; as starch, for example, in early infancy. If farinaceous food be given to a child under five or six months, it is not digested, owing to the absence of saliva; and the same holds good in the case of a sick man with a dry mouth; amylaceous food is not suited to his condition.

Diet has much to do with the physical and social character of a people. Their vigor of body and strength of mind both depend much upon what they feed on. He thinks he can generally tell what a man eats by his looks. He was once visiting a family the members of which were sallow, thin, anæmic to a degree that excited his surprise; but he ceased to wonder that they looked so badly when he sat down to breakfast with them next morning, to a repast consisting of middling, corn-bread, and raw onions. Dr. Rush said that he was often unable to ascertain what was the trouble with his patients until he had dined with them. On one occasion he found a dyspeptic *bolting* his food. This explained the origin of his disease.

Not only children but adults often take more food than the system requires; and indigestion, headache, palpitation, etc., follow, if not apoplexies, rheumatism, and premature death. The aged, as their powers of mastication fail, are compelled to exercise caution in respect to their diet. Would you permit a dyspeptic, who has brought on his disease by a certain manner of living, to continue the injurious food? Or allow the convalescent from typhoid fever to take solid food, knowing the intestines to be liable to perforation from slight increase of peristaltic action? Or indulge his appetite for milk, knowing how apt it is to coagulate into an indigestible mass of caseine? He thinks no one who has seen much of this disease can have failed to note bad results from indiscretions in diet. But typhoid fever is far from being the only disorder in which errors of diet are pernicious. There is scarcely a human malady which may not be aggravated by food, and that too of the patient's own choosing.

On the other hand, there are doubtless cases in which patients have taken food of a forbidden kind and yet were benefited by it; every practitioner must have met with them; cases in which kraut, buttermilk, honey, etc., were eaten with advantage. During the late war a physician, usually very corpulent, was exceedingly emaciated by diarrhea. His skin was entirely too large for his body. He had been living on salt bacon, hard-tack, and bad water. Dr. W. advised him to go where he could get milk, eggs, cabbage, turnips, and fruits, and to take no medicine. In three weeks he returned, plump and well; he had followed his instructions to the letter. But to infer from one such instance that these articles are allowable in every case of diarrhea, would be as illogical as to assume that because they hurt some other patient they were therefore never to be given to the sick. A diligent inquiry, he strongly suspects, would show that more sick people have been injured than benefited by such a diet. He does not think that milk is a better diet than beef-tea for the sick.

His impression is that the curd formed by milk is indigestible, and often oppresses the stomach. Beef-tea as generally made is disgusting; but if properly made he has found it more acceptable to patients than anything else.

If what we read and hear of yellow fever is to be relied on, the majority of patients would be destroyed if we allowed them to gratify their instincts for food. During early convalescence from this fever patients are clamorous for food, and yet if it is given fatal vomiting follows. Nevertheless he has heard of one case where the patient had an insatiable craving for codfish, took it, and recovered. The patient may be allowed to indicate what he wants to eat, but the physician should decide as to the propriety of it. He always gives the sick man what he wishes if he thinks it will not hurt him. Should there be a strong craving for some indigestible article, it may be proper to gratify it in the most cautious manner; but most patients, after tasting, become disgusted with it.

Dr. Bailey believes that the therapeutics of Dr. Yandell's paper are incorrect. The object of food is to make blood; and the better the blood, the better are all the vital processes. Good blood is impossible without food properly assimilated. He does not consider it safe to follow the indications of appetite in cholera infantum. The child, so far from selecting what is best for it, may choose the very worst. It may take dirt in preference to the most healthy food. He can not agree with Dr. Wible that we may tell how the people of a village live by their looks. It is not what is in their larders but what gets into their blood that determines their physical appearance. Nutriment is important in all diseases; is essential in protracted cases, and should be supplied at regular intervals.

Dr. Galt agrees in the main with the doctrines of the paper, but thinks many exceptions to the rule therein laid down must be admitted. According to his experience the great difficulty in morbid states of the system is to restrain

the appetite. Two cases fell under his observation during the late war which illustrate the danger of obeying the appetites of convalescents. Both were in patients recovering from typhoid pneumonia, and with both the danger from the disease seemed to be over. But a new nurse having taken charge of the patients, gave one some goose-soup, and the other a chew of tobacco, because he was seen chewing straw, and it was supposed wanted tobacco. The first died of tympanitis; the other was thrown into convulsions and died.

Dr. D. W. Yandell would cite two cases *per contra*. One was the subject of a long-standing and exhausting diarrhea. The patient was extremely emaciated. Her sleep was broken by almost innumerable calls to stool. She was thought to be past cure. Her single want was for pickles. These she begged for, night and day, and they were as constantly refused. She asked to see him, a physician who, she understood, would allow his patients to eat what they wanted. She implored to have pickles. He sent her from his own house four good-sized mangoes, one of which she ate between noon and bed-time. That night she passed (the first time for weeks) without a discharge. She made a perfect recovery, at a cost to her physician of a jar of pickles.

The second case was in the person of an immensely fat woman, who had a furious diarrhea. Her single want was buttermilk. This she asked for daily, and was as often denied. He directed buttermilk *ad libitum*, and had the satisfaction of seeing her get better at once, and go on to get well. She has had similar attacks since, and all yielded to the buttermilk.

Dr. Speed wanted to add a buttermilk case. He had a patient very low with typhoid fever; it was a bad case, attended with great prostration. In fact, he regarded the state as nearly hopeless. His patient desired buttermilk, but Dr. S. was afraid to allow it. In his absence, however, the nurse, not understanding the directions, gave the sick man as much to drink as he wanted. Next morning the

Doctor found him better, and he went on and got well. He would not say how it was with others, but as for himself he regarded the stomachs of his patients as better tests of what they needed than his brains. He once had a case of cholera infantum, in which the child had become greatly emaciated. Medical treatment had been unavailing. One day its mother took it on horseback to a neighbor's house, where they were taking a bee-hive. The nurse carried the little invalid into the yard where the children were eating honey, and gave it as much as it would eat. Could you have reasoned it out that honey was good in cholera infantum? And yet it proved so in this case, for the child recovered. The honey cured it. Do you ask me whether I would give my patients *anything?* Not if one should ask me for a paper of tacks or tenpenny nails; but almost anything else. Let him try it. It is the quantity that does the mischief where food proves injurious. A man with dyspepsia, who had tried many physicians, some years ago applied to me, and under my treatment seemed to get better. Meeting him after a time, I was delighted to see how well he looked. I congratulated him on his improvement, and asked him what had brought it about. "I took your physic," he replied, "as long as I could; and one day hearing a German crying 'kraut,' I fancied I should like to eat some of the thing. I bought a tubful, and it cured me."

Another case, one of cholera morbus in a lady of eighty-four. The diarrhea was excessive; the number of evacuations in a day could hardly be counted; and this state of things had lasted nearly two weeks. Treatment had hardly done her any good. I asked her if there was anything she would like to have. "I want cold water," she answered, "but they won't give it to me." I ordered her to have as much as she wanted. She craved besides middling and onions. They too were given her, and she got well. She was set up by following her physical instincts.

Dr. Richardson had been twenty years engaged in the

practice, but had heard sentiments expressed to-night which he had never dreamed of; that diarrhea, typhoid fever, cholera infantum, etc., are to be cured by honey, buttermilk, and mangoes. He was reminded by the cases related of the experience of a quack in the treatment of yellow fever. One of his patients, a Frenchman, took a fancy to molasses and salt herring, and on eating them recovered. A Dutchman had the fever, and as the herring and molasses had cured the first patient they were served up to him, but with a very different result. He died; and the quack made a note in his memorandum-book to this effect, that "molasses and salt herring are good for a Frenchman in yellow fever, but death to a Dutchman."

I recollect many painful cases of mischief from yielding to the appetites of the sick. I have lost cases of typhoid fever from the indiscretion of nurses in giving improper articles of food. I would certainly not permit the sick to have mangoes or honey. The appetite may guide us wisely, or it may mislead us fatally. In an illness with typhoid fever when a student, against the advice of my physician, I took brandy and recovered; but years afterward, in a severe illness, I followed the promptings of my appetite and suffered long from the indulgence. I raise my protest against this new doctrine of feeding patients in response to their appetites, and hope it will not gain prevalence.

Dr. Hale, of Owensboro, said the subject of diet for the sick gave him much trouble when he first engaged in practice. He was then governed by the books; but he soon found that his patients often could not or would not take the food prescribed; it was disgusting to them. Generally, however, there was something they would like, and after a time he began to yield to their fancies. This had now been his rule for some years, and experience convinced him that it was a safe one. He was not able, in fact, to call to mind a single instance in which a patient suffered from the practice, while he remem-

bered many who had derived great relief from it. In cholera infantum he was in the habit of giving his little patients whatever they craved. He indulged their appetites for fruits, even for watermelons, so generally condemned; and if the quantity be regulated he believed they would never prove injurious; and he would extend the practice to fevers. He once had typhoid fever himself, and during his illness had no appetite for ordinary articles of food, but longed for apples, pears and cider. His physician shook his head at the suggestion; but he sent for a jug of hard cider notwithstanding, and found his thirst allayed by it. He ate half a dozen apples at one time and continued to drink cider freely, and was soon convalescent. In reference to the use of stimulants in disease, his rule was the same; he would follow the suggestions of the appetite. The time to begin their administration is when they are craved.

Dr. Hornor does not think the case of negroes is contradictory of the theory of Liebig. They make up in quantity what their food lacks in quality, and so get the requisite amount of nitrogenous matter. In the army, as the labor of soldiers was increased, it was found necessary to increase their rations of beef. So railroad contractors find by experience that their laborers must have food rich in nitrogen in proportion to the severity of their labor.

Dr. Smith referred to calculations which had been made, showing that if the motion of the heart was kept up at the expense of its own tissues it must be worn out in about eight days. He thought the cases of recovery cited, following the indulgence in certain articles of food, proved only the return of appetite, and not that the recovery was due to the gratification of the appetite.

Reviews.

Lectures on some Subjects connected with Practical Pathology and Surgery. By HENRY LEE, F. R. C. S., Surgeon to Saint George's Hospital, etc. London: John Churchill & Sons. 1870.

The present work contains the substance of the second editions of two separate volumes of lectures previously published, but now out of print. We well remember the profit and pleasure which the perusal of Mr. Lee's earlier lectures afforded us, and we turned to the work now before us as to the face of an old and valued friend. Several new lectures have been added, and the book now illustrates many of the leading subjects in surgical pathology.

Mr. Lee is perhaps best known in this country by his writings on syphilis; a subject which he here discusses with his characteristic ability, and with great fullness of detail. Indeed one entire volume is devoted to this single topic. But it is of some of the contents of the other volume, more particularly in their bearing on certain points in practice, that it is our present purpose to speak; and first of—

Varicose Veins. For many years past our author has been the earnest advocate of obliterating varicose veins by the ligature and the subcutaneous section of the compressed vessel. At one time he thought it best to allow the blood to coagulate in the vein before it was divided; but he now thinks that is entirely superfluous, and for some time back has performed the operation always at one sitting. The operation which Mr. Lee practices guards, he thinks, against those accidents

which many surgeons have been wont to believe attach to all methods for the radical cure of this affection. The subcutaneous section of the vein prevents the access of air; the lymph effectually obliterates the vessel, and binds it to the neighboring connective tissue, while the acupressure of the vein above and below the point of division obviates the dangers of a thrombus. The operation may be thus described: the vein being pressed out of its bed by the finger, a needle is introduced, so that its point may pass into the bed of the displaced vein. The pressure being removed, the vein regains its natural position, and in doing so it rolls over the point of the needle. Pressure is now made toward the head of the needle, the point of which is brought out on the opposite side; or the vein is taken well up between the finger and the thumb, and the needle passed behind it and brought out as near to it on the opposite side as possible. The vessel is then compressed with a figure of "8" ligature, or by an elastic band passed over the ends of the needle. The operation is repeated in another point of the vein about an inch distant. The vein may then be divided or removed. Simple subcutaneous division is usually sufficient. The needles are removed on the third or the fourth day; the upper one generally a day before the lower one. The cure is usually complete about the seventh or eighth day.

It is of the first importance that the needles should press fairly behind the veins where they are large, lest the channel be not completely closed, and an opening to the general circulation left for any morbid product that may be present. This care is not necessary in operating on vessels of small size. Clusters of varicose veins in the legs, for instance, may be pierced by a needle, and tied with impunity. If a figure of "8" ligature is thrown round the needle, the small veins which may happen to be punctured are subsequently as completely closed as if the needle had been carried under them. Our author has never known serious symptoms to follow

this operation when performed in the manner above described.

Varicocele. Shortly after Mr. Lee devised his operation for the cure of varix in the lower extremities, he began treating varicose veins in the spermatic cord in the same manner. In doing this operation he uses chloroform to slight anæsthesia simply. The scrotum, on the side of the varicocele, is then taken between the fingers and thumb, and the vessels are allowed to glide one by one out of the hand. Presently the vas deferens will escape. As soon as this is separated from the other vessels, two needles are passed beneath the veins about an inch apart, and carried between the vas deferens and the veins to be operated upon. Pressure is then made by means of elastic bands passed over the extremities of the needles, and the veins are divided subcutaneously in the interval between them. A very thin knife is introduced horizontally, with its edge directed upward or downward, and made to pass, like the needles, between the vas deferens and the affected vessels. This part of the operation may be performed while the veins are retained between the finger and thumb. The edge of the knife is then turned forward, and the cluster of veins divided toward the skin. In doing this it is convenient to place the fleshy part of the thumb of the right hand over the veins, in order to prevent their yielding before the knife. Care should be taken that the knife is not introduced below more veins than are included in the ligatures.

A little blood sometimes flows out of the wound made by the knife; but this in general amounts to an insignificant quantity. Some slight hemorrhage into the cellular tissue will also occasionally follow, but in no way interferes with ultimate success.

The bands and needles are removed on the third or fourth day, at which time the divided vessels are closed by lymph. A few days later, and the veins are permanently obliterated.

This operation has proved as satisfactory as that performed on the veins of the leg.

Hemorrhoids. Our author treats these troublesome tumors, when they are bright, fungous-looking, readily extruded, and bleed, by the application of nitric acid. In properly-selected cases, and properly used, the application gives little or no pain, does not confine the patient to the house, is perfectly safe, and usually no other treatment is requisite. In another class of hemorrhoidal tumors, where a large extent of mucous membrane is implicated, or where it is thickened, and the neighboring structures infiltrated with lymph, or where the mucous membrane from long exposure has become hardened and altered in structure, Mr. Lee removes the tumors with a curved knife, hemorrhage being restrained by a broad forceps or "clamp." "The cut surface is then touched with the strong nitric acid, or with the actual cautery, and the parts are returned into their natural position." By this procedure "the great and only objection to the excision of hemorrhoidal tumors is removed." The nitric acid applied to the cut surfaces is not invariably sufficient to prevent hemorrhage, but in no case observed by Mr. Lee has there been the least inconvenience from this source when the actual cautery was applied. The pain, which would naturally be supposed to be considerable under these maneuvers, need not, according to our author, be taken into the account, except in the case of external piles or redundant growths of the external integument. Here the parts may be frozen or chloroform administered. Mr. Lee considers the procedure less painful than any other means equally efficacious, and safer than the common operation now in use. It requires less confinement, and convalescence is speedier than after the operation by ligature. He restricts the use of the ligature to the following conditions: "When the swelling of the rectum resembles an erectile tumor, it being composed of varicose veins, dilated and anastomosing arteries; when it involves a considerable extent of

surface, is broad-based, sessile, and particularly if the affection be attended with severe attacks of hemorrhage,—the ligature may be the only method of cure. Again, where the hemorrhoids have been of long-standing, and exposed to long-continued irritation, and the coats of the veins become much thickened and altered where they are irregularly dilated and varicose, so that the tumor, on section, shows a cystic structure in its interior, bounded on all sides by an indurated and hypertrophied fibro-cellular growth; or where the gut is very lax, and a considerable amount of prolapsus becomes superadded to the local tumor,—ligature is the proper remedy."

Fistula Ani. The mechanical varieties of this complaint are esteemed by Mr. Lee to be of much less consequence as objects of study and treatment than the patient's general health and habit of the body. The constitution must be set right before local measures are employed. If serious structural disease exists in the lungs, liver, kidneys, or other important organs, surgical efforts for the cure of the fistula will be entirely abortive.

In the simpler forms of fistula our author operates by the knife. In those which extend too far for the knife to be used in safety, he employs a metal wire, which, being tightened daily, acts as any other ligature. He believes in the existence of fistula without an internal orifice; and to cure this variety he makes an artificial opening into the bowel, divides the septum, and along with it the muscle.

Stricture of the Rectum. This affection, which so many surgeons have found rebellious to treatment, our author is generally able to cure by dilatation with graduated and slightly conical india-rubber bougies. He thinks the secret of the treatment is "*the greatest possible gentleness;* never to give pain or irritate the parts." In cases that resist the bougie, "or seem to require an infinite time for success," he divides the stricture *forward* a quarter of an inch; or, if the single incision be found inadequate, he "notches the stricture

superficially in three or four places," and then dilates with the bougie for a few minutes every day. He deprecates deep incisions, and is opposed to forcible dilatation, unless the stricture is low down.

There are many other topics of great interest in the work under notice, but our space is exhausted. It is to be regretted that a surgeon of the strong sense and great practical experience of our author does not write more.

The Physician's Prescription Record: containing nearly four hundred Prescription Blanks, with Forms for Record of the Condition of the Patient and copy of the Prescription. Philadelphia: S. W. Butler, M. D. 1870.

Prescription and Clinic Record. Sixth edition. New York: William Wood & Co. 1870.

We notice these two note-books simply to keep our readers informed of everything likely to interest or benefit them. They are both efforts to meet a want and supply what would be a real convenience to every busy practitioner; *i. e.*, a handy prescription-book, with place to record the prescription and make brief notes of the principal symptoms of the case. But Dr. Brinton's book is too bulky to carry; and, besides this, to separate the prescription three separate tears of the sheet must be made, which is inconvenient and troublesome. The Messrs. Wood's book is far preferable as to these points, but its size and limp covers also unfit it for the pocket; the blank for the prescription is nearly as large again as necessary. This book, however, contains one excellent feature: tables for record of the temperature, pulse, and respiration, reduced to proper size for the pocket. We must say that it would be just the thing needed, and we hope the publishers will make the change. R.

Clinic of the Month.

SOME OF THE USES OF THE SULPHIDES.—Taken internally, these substances promote suppuration. Their first effect on a sore is to increase the discharge from it, then to dry it up and promote its healing. They are often capable of dispersing abscesses in their earlier stages; after pus has formed they hasten the maturation of the abscess, and promote the elimination of the matter, without augmenting the inflammation; which latter indeed they often seem to check and circumscribe. That they possess these properties is attested by their power over abscesses and boils.

By promoting the suppuration and expulsion of diseased products, the sulphides often reduce and sometimes remove altogether scrofulous and tuberculous enlargements of the neck. They convert a thin, sanious, and scanty discharge from ulcers into one which is thick, creamy, healthy-looking, and at first abundant. They are of extreme value in onychia. They are perhaps most strikingly useful, however, in the indolent abscesses which sometimes form in the cellular tissue of scrofulous children during the earlier months of life. These abscesses, it is known, are excessively chronic, persisting sometimes for months or even for years. They vary in size from a pea to a florin. When matured they feel soft and boggy, and discharge a thin, unhealthy pus through a circular opening, often not larger than a pin's head. The fingers, hands, and sometimes the toes are the seat of these sores. When the fingers are involved, they become swollen and nodose; the skin over them grows red, tense, and glazed, and is marked at various points by slight depressions, which

give vent to a thin discharge. In this most troublesome affection the action of the sulphides is admirable. They put a stop to the formation of new abscesses, and dry up and disperse many of those which are just beginning. They forward others to quick maturity, causing their contents to be discharged, and converting them into healthy sores. Perhaps their effects are most conspicuous on the diseased fingers. They increase at first the discharge, but make it at the same time creamy and laudable. In a week or two the discharge begins to diminish, the fingers gradually regain their proper size, and the sores finally heal. Meanwhile the health of the child is steadily and very greatly improved.

The sulphides are almost equally useful in the large and hard swellings which are sometimes observed under the ears in children after scarlet fever, etc. Our author always employs the *sulphide of calcium*. Of this he puts a grain in half a pint of water, of which he directs a tea-spoonful to be taken every hour. Owing to the rapidity with which the salt, after being dissolved, becomes oxidized and converted into a sulphate, it is necessary that the solution should be compounded fresh every day. (Dr. Sidney Ringer's Hand-book of Therapeutics.)

Inhalations of Iodine.—These may be made, in a simple and handy way, by adding to a pint of boiling water, contained in a small jug, twenty to thirty drops of the tincture of iodine, and directing the patient to breathe the steam that rises from the mixture; first covering his head and the vessel with a towel to prevent the escape of the vapor. The inhalation should be continued for five minutes, and repeated night and morning. Iodine applied in this way is often of signal use in that form of coryza accompanied by severe frontal headache. This affection is often removed at once by the inhalations. In the hoarseness, hoarse hollow cough and wheezing, heard in some children after measles, and in others on simple exposure

to cold, the inhalations generally remove the trouble and prevent its return.

Dr. Waring Curran recommends the following mixture for inhalation in diphtheria: iodine and iodide of potassium, āā four grains; alchohol, four drachms; and water, four ounces. Of this a tea-spoonful is added to boiling water, and the steam from it inhaled for ten or twelve minutes many times a day.

The tincture of iodine may be employed with benefit to remove tartar from the teeth, and as a stimulant to the gums, when these are receding, leaving the teeth exposed to decay. When used in the latter condition, it should be painted over the gums close to the teeth. *(Ibid.)*

THE COLD SPONGE-BATH IN LARYNGISMUS STRIDULUS.—Laryngismus stridulus, by the spasm of the glottis and the asphyxia which it produces, is well known to be one of the most frequent causes of convulsions in children, and in this way sometimes destroys life.

By far the most effectual treatment of this affection is by cold sponging several times a day. The application generally cures the disease at once; and it is by no means uncommon for the child to lose all traces of it after the first sponging. This suddenness of cure proves that the action of the bath is not merely a tonic one, although in this respect it is useful, as false croup is very generally met with in weak and debilitated children. Should the disease linger in spite of this treatment (as it is liable to do where the irritation of teething, worms, diarrhea, etc., is added), the attacks of crowing can mostly be immediately cut short by the bath, and general convulsions often thus be averted.

The bath is thus administered: place the child in warm water as high as the ankles, and before a good fire. Sponge it all over, except the head and face, from two to five minutes; wipe dry, and rub well with a soft and rough towel. If the child is weak, put it in a warm bed, that reäction may be

promoted. Children whose rest is broken, and who are waked at night by a "catch in the breath," are generally relieved by the cold sponge applied night and morning. *(Ibid.)*

On the Bromides.—It occasionally happens that children, from the time of their birth, and without any malformation of the throat, and who can swallow solids with ease, are choked every time they try to drink fluids. This is an affection which may in no way be connected with diphtheria or other affections of the throat. Such children may be much benefited by the bromide of potassium. These salts have a beneficial influence in a form of colic which sometimes affects children a few months to one or two years old. With such the walls of the belly are retracted and hard, while the intestines can be seen at one spot contracted into a hard lump the size of a small orange, and this contraction can be seen through the walls of the belly to travel from one part of the intestines to another. These attacks of colic are very often repeated, and produce excruciating pain. The form of disease of which we are now speaking is unconnected with either constipation or diarrhea or flatulence. It is sometimes associated with a chronic aphthous condition of the mouth. It generally resists all kinds of treatment, but will mostly at once yield to the bromides.

The bromide of potassium is of use in all forms of convulsions; it is good in epilepsy, in the convulsions of Bright's disease, and in the convulsions of children, whether these be due to centric or eccentric causes. The convulsive form of epilepsy is remarkably amenable to this salt. Attacks of petit mal are mostly uninfluenced by the drug. The effects of the medicine are most pronounced when the disease is of short standing. In some cases of convulsive epilepsy the bromide is powerless, and we can not at present foretell when the medicine will succeed and when it will fail. Its administration should at times be omitted for a few weeks, or the

system becomes accustomed to its presence and its good effects cease. Convulsions due to intestinal worms often resist the remedy. Convulsions accompanying simple meningitis are often checked by it. In simple, uncomplicated hooping-cough—and in this form of the disease alone—the bromide possesses great power, diminishing both the severity and frequency of the paroxysms. It is also a most efficient remedy in laryngismus stridulus.

The delusions and frightful imaginings which sometimes occur in women at night during the latter months of pregnancy are removed, and in their place pleasant sleep secured by the bromide of potassium. It is of great service in that form of night screaming of children which appears to be allied to nightmare. It is equally useful in the nightmare of adults. In some forms of menorrhagia it is superior to any remedy we possess. *(Ibid.)*

On the Acids.—Syphilitic warts and condylomata may be, with great certainty and without pain, removed by a wash of diluted nitric acid, with which they are to be kept constantly moist; a drachm or two drachms of the dilute acid to a pint of water is sufficient.

Repeated experiments have shown that when dilute acids are taken into the stomach they check its secretion, while alkalies excite the secretion of the gastric juice. Hence it is said that acids lessen acid and increase alkaline secretions from glands, while alkalies check the alkaline but increase the acid. From this it is apparent that the time, in respect to the meals, for giving acids is all important. If given before meals, acids check the secretion of the acid gastric juice, and so hinder instead of aid digestion. When the secretion of gastric juice is deficient, the acid should be taken *after* meals. As a rule, atonic dyspepsia is best treated by alkalies given a short time *before* meals, when they increase the secretion of the gastric juice. In certain cases the acids relieve where the alkalies

fail. These are presumably where the mucous membrane has been worn out by excesses in eating or drinking, and where no stimulant can excite a sufficient flow of the gastric juice. In many diseases of the stomach, and affections elsewhere disturbing this organ, an excess of acid is secreted by its follicles. This undue secretion is checked by acids taken before food. Excessive or irregular fermentation and excessive secretion of the gastric juice are the two causes of acidity of the stomach. Acids possess the power of controlling and checking this acidity, and the symptoms which accompany it, whether they depend on pregnancy, uterine disease, calculus of the kidneys, or the various dyspepsias or more serious diseases of the stomach.

Eructations of offensive gas, with the odor and flavor of rotten eggs, are corrected by the employment of the mineral acids. A clue to the administration of acids on the one hand, or of alkalies on the other, in the treatment of the dyspepsias, can sometimes be obtained by testing the reäction of the fluids ejected from the stomach. Not unfrequently, soon after a meal, a fluid regurgitates, often without any labor on the part of the patient, into the mouth. Sometimes this is strongly acid, a reäction which is easily discovered by the sufferer. If such be the case, the acidity and pyrosis can be almost immediately removed by the exhibition of nitric or hydrochloric acid shortly before each meal.

On other occasions the fluid of pyrosis is of an alkaline reäction. It is often accompanied by much distress, with nausea and vomiting of the food which has shortly before been eaten, and when such occurs the rejected contents of the stomach often possess a strong alkaline reäction. Here all the distressing symptoms, the nausea and the vomiting, may be removed by the use of an acid as soon as the meal is concluded. If the acids be too long continued, the improvement which first follows their use ceases, and fresh symptoms arise, which, strange to say, yield to an entirely opposite treatment.

Sulphuric acid is of unquestionable benefit in choleraic and summer diarrhea. When its results are unsatisfactory it depends in many instances on its being given in too large quantity, whereby the acidity of the canal is increased and the diarrhea often aggravated. Its good effects most certainly follow on a small medicinal dose. Nitric acid in similar doses often acts most admirably in the diarrhea of children when the motions are green, curded, mixed with mucus, sour, and their passage accompanied by much straining. It is also extremely beneficial given with pepsin in the chronic diarrhea of children where the motions are pale and pasty, and have a sour and disagreeable odor. *(Ibid.)*

On Mercury.—The influence of mercurial preparations on tonsilitis in certain conditions is most marked. When in quinsy or scarlatina the tonsils are so enlarged as almost to meet, and when the difficulty in swallowing is nearly insuperable, and there is even danger of suffocation, if at such a time a third of a grain of gray powder be taken every hour, in a few hours the swelling is much reduced, and the danger, discomfort, and distress much removed. The effects of the mercury in such cases is often most signal. If an abscess has formed, this appears to be more quickly brought forward and evacuated by this treatment. The same powder, in the same way, is useful in mumps, and probably, as in the last case, it acts only after its absorption. The swelling and pain of this affection may be speedily removed by this treatment.

In that form of vomiting often observed in very young children, which is characterized by the suddenness and quickness with which it occurs after food is taken, and is unaccompanied by either effort or retching, one third of a grain of gray powder every two or three hours, or the twelfth of a grain of calomel every two hours, will in most instances effect a cure. Where a child passes three or four pale, clayey, pasty, stinking motions in the day, and it has general bad

health, imperfect digestion, etc., the stools may be corrected in a short time by the following: a grain of corrosive sublimate in half a pint of water; of this a tea-spoonful every hour; or, what our author considers still better, a third of a grain of gray powder every hour or two.

The bichloride solution is especially useful in that form of diarrhea, observed in children, marked by slimy stools, mixed with blood, and accompanied by pain and straining. The slimy character of the motions is the great indication for this medicine, which character will with certainty be removed by its exhibition. It sometimes happens the slime is very tenacious, and, being colored with blood, is described by the mother as "lumps of flesh." This affection may be acute or chronic. In either instance the relief and cure by the bichloride is remarkably speedy and certain. The dysentery, acute or chronic, of adults can be relieved in a similar manner, if the stools are slimy and bloody.

THE SULPHATE OF COPPER, either by the mouth or as an injection into the rectum, is often effectual in staying severe chronic or acute diarrhea, whether it depends on organic disease or not.

TARTAR-EMETIC is invaluable in the following disease: Children, from six to twelve years old, on the slightest exposure to cold, are sometimes attacked with wheezing and difficulty of breathing, which is oftentimes so considerable as to compel them to sit all night propped up with pillows. The expectoration may be pretty abundant, but children of this age do not generally expectorate. On listening to the chest there is heard much sonorous and sibilant, with perhaps a little bubbling, rhonchus; but this last is often absent. The child can be heard to wheeze for a considerable distance, and it may be the noise is so great as to be heard many rooms off. Occasionally the cough is troublesome, and on each exposure

to cold the voice may become hoarse, and the cough hollow and barking. Some children are thus afflicted whenever the weather is cold, even in summer, and may not be free the whole winter; with others the attack lasts a few weeks only, or a few days. This affection sometimes follows measles, and is compared by the mother to asthma, with which it is certainly allied, if not identical. Such children are speedily benefited by tartar-emetic. The following is the mode of administering this salt: add a grain of it to half a pint of water, and of this give a tea-spoonful every quarter of an hour for the first hour, and hourly afterward. If the wheezing comes on at night, give the medicine only at this time. Its effects are usually very prompt, the child often being greatly benefited on the first night of its employment. It may be thought so small a dose must be without effect, but very generally when the medicine is first given it is sufficient to produce vomiting once or twice in the day. If this occurs the dose must be made still smaller, as it is not necessary to produce sickness of the stomach in order to obtain its effects on the lungs. *(Ibid.)*

Arsenic.—There are few remedies more useful in many diseases of the stomach than arsenic. In the so-called irritative dyspepsia, where the tongue is furred and its papillæ red and prominent, a drop of the solution of arsenic taken shortly before food will be found of great benefit. It is almost unfailing, when administered in the same quantity and at the same time, in the vomiting of drunkards. This usually occurs in the morning before breakfast. It is accompanied by great straining and distress, but generally very little, and sometimes nothing, is ejected. In the latter case it is called dry vomiting. The vomited matters are generally intensely bitter and sour, and of a green color. To arrest this symptom there is no remedy like arsenic. In chronic ulcer, and even in cancer of the stomach, arsenic is invaluable, by alleviating the pain and

checking the vomiting of these complaints. Small doses of arsenic generally benefit persons with whom the food simply regurgitates, and is rejected without effort. A solution of arsenic in one or two drop doses is always of service in that form of chronic dyspepsia and diarrhea called lientery, and which is most common in children from eight to twelve years of age. It does good almost immediately, and generally effects a cure in a week or ten days.

Arsenic should never be given on an empty stomach, nor in increasing doses. Children about five years old will bear nearly as large a dose as grown-up people. The largest dose ever required is (of the solution) five drops, repeated three times a day. An exception to the last rule is furnished by chorea, where, if the affection has resisted this quantity, the dose may be cautiously augmented. *(Ibid.)*

IPECACUANHA. — There are few remedies so powerful to check some kinds of vomiting as ipecac. In drop doses of the wine, administered every hour or three times a day, according to the urgency of the case, the author has seen it, in abundant instances, check the following kinds of sickness: 1. Of pregnancy, especially when this is not accompanied by and dependent on acidity of the stomach, one drop of ipecacuanha wine, given three times a day, will, in the great majority of cases, give complete relief. 2. The morning vomiting of drunkards; but this can be still better controlled by the solution of arsenic. 3. The morning vomiting which sometimes accompanies general weakness, and is met with in convalescents from acute diseases, and in persons recovering from child-birth. 4. It often controls immediately the vomiting of acute catarrh of the stomach in children. Indeed the remedy appears to have a greater power over the vomiting of children than of adults. 5. It often removes or lessens the vomiting of hooping-cough when this is produced by the violence of the cough, although it may in no way lessen

the severity of the cough. Cases occur of vomiting from this cause which are quite unaffected by ipecacuanha, but which immediately yield to alum. 6. There occurs a species of vomiting after meals, in which there is no nausea nor pain, or even discomfort; the food is merely rejected, partially and often very little digested. This complaint may last a long time, but in many instances is quickly stayed by ipecacuanha wine. Arsenic is a still better remedy in this disease.

Ipecacuanha, in the author's experience, proves of little use in the following forms of vomiting: 1. Where, in children, the vomited matters are composed of hard and large lumps of curdled milk. Lime-water is the best remedy in such a case. 2. It is not very generally useful in that form of vomiting met with in young children, a few weeks or months old, with whom the milk is almost immediately rejected after it is swallowed. This form of vomiting is best treated by small doses (one third grain) of gray powder, or of calomel (one tenth grain). Ipecacuanha sometimes checks the vomiting from cancer of the stomach, and has succeeded where the more commonly used remedies have entirely failed. *(Ibid.)*

ALUM.—As a wash in vulvitis of children, few remedies can be compared to alum. It should be used in the strength of sixty grains to a pint of water, and this must be frequently applied, by the help of a syringe, to the secreting surface, which, however, should first be washed free of pus with warm water. Apply every hour or oftener, and a piece of lint soaked in it may be left between the parts. This solution may be too strong, and both increase the inflammation and discharge. Should this be the case, its strength must be reduced. In that form of simple ulcerative stomatitis which begins at the edge of the gums close to the teeth, and is often limited or most marked over one half of the jaw, dried alum applied by the fingers many times a day is sufficient of itself to heal the ulceration in a few days. The ulcers

of aphthæ may be touched a few times a day with the same preparation, after which they speedily heal. Usually, however, the chlorate of potash and perhaps a purgative are all that is required. In uncomplicated hooping-cough the violence and frequency of the paroxysms are speedily reduced; indeed often the frequency is at once lessened to a half, and the case is quickly conducted to a satisfactory end. The troublesome vomiting so often met with in this disease is often at once checked by alum, while at the same time the appetite is much improved; effects which are observed even before the cough is in any way controlled. It is possible that alum influences hooping-cough by its astringent action on the throat. Give in doses varying from two to six grains every three hours, or smaller doses every hour. The paroxysmal cough, which may continue a long time after hooping-cough, and other coughs having the same character, may be well treated by alum. *(Ibid.)*

Creosote.—The author believes that the failure of the remedy to check nausea and retching in many cases is owing to the largeness of the dose that is given, and which often itself produces the very symptoms for which it is administered. Its best effects are obtained if just sufficient creosote is added to water to make it taste distinctly but not strongly of the medicine, and of this a dessert-spoonful may be taken frequently. Thus employed, this remedy will often prove effectual in staying nausea and retching, but is considered by some persons to have less power over actual vomiting. (*Ibid.*)

Treatment of Delirium Tremens. — Concerning this vexed question, Dr. Murchison says (London Lancet) in regard to—

1. *Alcohol.* He allows none, except in cases where there is evidence of fatty heart or an intermitting pulse, or some special complication, as phthisis. He has never seen any

bad consequences from suddenly and completely cutting off the supply of alcohol.

2. *Food.* Mild cases are often cured by good nutriment and abstaining from stimulants; but sleep will not follow this practice in severe cases, while in not a few bad cases there is congestion of the liver and stomach, and food of all kinds is rejected.

3. *Opium.* In many cases opium acts like a charm in speedily putting an end to the disease; while in others it fails entirely in inducing sleep, or may aggravate the symptoms, or even cause convulsions and coma. Is there no explanation of this difference? is it impossible to say when opium is likely to succeed or not? or must we, from being uncertain of the result, abjure the use of it altogether? He thinks an explanation of the difference is to be found in the state of the kidneys, as indicated by the characters of the urine. Whenever the urine contains albumen as the result of recent congestion or old disease of the kidneys, opium is almost sure to fail, and even prove injurious; and accordingly it is a good rule never to give opium until an opportunity has been offered to test the urine. But when the urine has been ascertained to be free from albumen, opium may be given without fear, and usually with the best results. It is best to commence with a full dose, and give a smaller dose every three hours afterward until sleep ensues. When the skin is dry, or the patient much excited, combine the opium with antimony in the manner recommended by the late Dr. Graves.

4. *Digitalis* is of undoubted power in the treatment of delirium tremens, and is particularly indicated in cases where the urine is scanty or contains albumen, or where the patient is very excited. He has known it to act most beneficially in cases where opium had failed. The large flow of urine following its use makes it probable that it assists in the removal of deleterious matters from the blood. From fifteen to thirty

minims of the tincture may be given, with or without carbonate of ammonia, every four hours.

5. *Bromide of Potassium.* In severe cases he has not found it alone of much service in securing sleep, although it has seemed to act beneficially in moderating active delirium or mental excitement.

6. *Hydrate of chloral* is a remedy for inducing sleep which is particularly applicable in those cases where opium is contraïndicated. It does not, like opium, interfere with elimination by the kidneys. One caution is necessary with regard to it. Not only in delirium tremens, but in other diseases, the first action of the chloral (like that of an insufficient dose of chloroform) is exciting rather than sedative. You must not on that account infer that it is acting injuriously, for a second dose will often produce the desired sleep. The best way to give it is in doses of half a drachm every two or three hours until sleep results.

To Disguise the Taste of Cod-liver Oil.—Dr. A. S. Hudson states (Pacific Medical and Surgical Journal) that tincture of gum guaiacum half an ounce, and essence of gaultheria one drachm, added to one pint of cod-liver oil, wholly covers the taste of the oil.

Chronic Catarrh.—The tincture of aconite in five-drop doses every four hours has cured this troublesome symptom when the ordinary remedies have failed. (Medical Archives.)

Notes and Queries.

CONEIN.—Prof. J. Lawrence Smith kindly sends the following very interesting item translated from the *Bericht. Deut. Chem. Gesell.*, December, 1870:

"*The first artificial production of a Vegetable Alkaloid (Conein) by Hugo Schiff.* This alkaloid has been heretofore only known as the product of the plant. Schiff has produced it artificially. For some months he has been engaged in examining the reäction of ammonia and the aminbases on aldehyde, and one of the products then discovered was *butyric aldehyde.* Latterly he has been examining the reäction of an alcoholic solution of ammonia in this butyric aldehyde at a temperature of 212° Fahr., and from this he obtained two bases, which he calls Tetrabutyraldin and Dibutyraldin. By heating this last until it distills, the first product is a neutral oily substance; and the substance which comes over last is a strong alkaline base that proved to be conein, having the poisonous and other physiological properties of the natural conein. The amount produced is yet small and costly; but the history of chemistry shows that the demand for its products is the greatest stimulant to increased production and cheapening cost. In this is to be seen a decided step toward the artificial production of morphine, quinine, etc."

SAPONIFIED COD-LIVER OIL.—Prof. Van den Corput, of Brussels, recently published a paper directing attention to the great advantages to be derived from the use of cod-liver oil saponified by lime in the treatment of phthisis. The principal advantages claimed by Dr. C. for this preparation

are its solid form and its slight and not disagreeable taste; its consequent easier ingestion and assimilation, and its freedom from tendency to produce the diarrhea so often caused by cod-liver oil as generally given.

The author's formula for the soap is: one hundred parts of pure cod-liver oil are saponified into a pilular consistence by means of hydrated lime, and then aromatized by one part of bitter almond or anise essence. This mass is divided into boluses of five or six grains each, sugar-coated, and covered, if desired, by ethereal tincture of tolu. Of these two are a dose, taken from three to five times a day. Given early in phthisis, Dr. C. claims that it often retards the progress of the affection, and sometimes leads to cure.

The soap as prepared above has been found by physicians of this city exceedingly offensive. The specimens that the writer has seen are simply disgusting. On inquiry made of one of our leading pharmaceutists, C. Lewis Diehl, as to the probable cause of this nauseous odor of the compound, we received the accompanying note, the publication of which may save some of our readers from disappointment in the preparation of Dr. Van den C.'s pills:

LOUISVILLE, FEBRUARY 15, 1871.

Editors American Practitioner:

The process of Prof. Van den Corput for pills of cod-liver oil is not available for general use, because he only indicates the composition of the pills instead of giving a working formula. The saponification of cod-liver oil by means of lime is effected by boiling the oil with milk of lime for an hour or two, according to circumstances. By using just sufficient or an excess of lime, *perfect* saponification results, and a hard, brittle, and insoluble soap is formed. As Professor V. d. C. speaks of saponifying the oil to a pilular consistence, it is evident he intends *partial* saponification; and, accepting this view, I attempted the preparation of the pills. Pure cod-liver oil, as nearly odorless and tasteless as the best oils in our

markets are found, was boiled with a sixteenth of its weight of lime, in form of dilute milk of lime, for nearly two hours. When cool, the partially saponified oil floated upon the surface of the watery liquid, and had acquired about the consistence of lard. Evidently this consistence was not that required, and more lime should have been employed to bring the oil to the proper consistence. The experiment was, however, not continued, as the extremely nauseous odor arising during the saponification, and retained by the saponaceous mixture, gave plain indication of the formation of products of decomposition, among them propylamine, which in their character gave sufficient reason for discarding the process from a pharmaceutic point of view. Whether the therapeutic value of cod-liver oil is thereby affected must be determined by the physician.

Very respectfully, C. LEWIS DIEHL.

GONORRHEA.—Davis L. Field, M. D., of Jeffersonville, Ind., writes that he has had very marked success in the treatment of this affection by the use of the following: bromide of potash, two ounces; water, four ounces. Dissolve, and add tinct. iodine, three drachms. Of this he gives a tea-spoonful every four hours. If it produces headache, he uses the medicine less frequently, but continues it until the discharge is arrested, which he finds to be usually within four or five days. He administers a saline cathartic every other morning, and directs weak injections of sulphate of zinc—one drachm to a pint of water—three or four times a day; and insures cleanliness of the parts by having them bathed often in cold water. He has not found his patients to suffer from chordee, or be troubled with venereal desire, while on this treatment.

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* Any of these works may be procured by application to Messrs. John P. Morton and Company, Louisville, Ky.